

## HIDDEN GEMS AND FORGOTTEN PEOPLE



### **ANNIE SCOTT DILL MAUNDER (1868–1947)| Solar Scientist**

Annie Scott Dill Russell was born on 14 April 1868 in Strabane, Co. Tyrone, the second of three children and the younger daughter of William Andrew Russell (1824–1899), minister of the Presbyterian Church in the town, and his wife, Hester (Hessy) Nesbitt Russell, née Dill. She was educated at home and at the Ladies' Collegiate School (later Victoria College), Belfast. She entered Girton College, Cambridge, at the age of eighteen on an open scholarship and took Part One of the mathematical tripos in 1889 with second-class honours. After a year as a mathematics mistress at the ladies' high school in Jersey she obtained a post at the Royal Greenwich Observatory in September 1891 as a 'lady computer', and was assigned to the solar department under Edward Walter Maunder, a solar astronomer. 'Lady computers' were successfully used at Harvard's observatory, but previous to Maunder's hiring, the "computers" name was reserved for teenage boys or women without college training. Being a "computer" was considered the lowest scientific post: the pay was poor and the work was generally considered tedious. Annie's job consisted of examining and measuring daily sunspot photographs, and through this work, she became an expert in solar astronomy.

Prior to meeting Annie Walter Maunder had worked to include women in astronomical societies, and therefore his support of her as a scientist was not unusual. Annie spent four years on the Greenwich staff, and resigned on 31 October 1895 before her marriage to Maunder on 28 December. Because of her marital status Annie forced to resign from her position. She continued to work as an "amateur," often assisting her husband without pay. She accompanied her husband on eclipse journeys. With a modest grant from Girton in 1897 she acquired a short-focus camera, which she used with great success to photograph the outer solar corona in India in 1898, capturing a coronal streamer extending to fourteen solar radii, the longest ever recorded up to that time.

Annie collaborated with her husband in his well-known work on the periodicity of sunspots. She also produced independently a catalogue of some 600 recurrent sunspot groups recorded at Greenwich (1907).

The Maunder's demonstrated a correlation between the number of sunspots and the climate on Earth. As early as 1905, they observed solar mass ejection, when isotope plasma, like solar wind, and magnetic fields rise above the solar corona or are released into space. They developed the "Maunder butterfly diagram," which shows latitude of sunspots against time and is called "butterfly" because butterfly-like shapes appear across the graph. Their observations about the lack of sunspots between 1645 and 1715 were later coined as the *Maunder Minimum*. They published *The Heavens and Their Story*. Often other astronomy couples had the man's name come first on books, but because E. Walter Maunder believed the book was hers, Annie Maunder's name appeared first.

Annie returned to her former duties at the Greenwich observatory as a wartime volunteer from 1915 to 1920. In 1916 she became a fellow of the Royal Astronomical Society, the first woman to be admitted to membership. Maunder was an active member of academic societies, including the British Astronomical Association, which her husband has founded before meeting her. She was the first editor of the Association's journal holding the position for 15 years. She was invited several times to be its President but refused.

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In her later years she acquired an interest in ancient astronomies and came to be regarded as an authority in this field. Her very last paper (1936) was a revised estimate of the date for the origin of the constellations, which she placed at 2900 BC.

Annie Maunder survived her husband by almost twenty years, and died at her home, 52 Elms Crescent, Wandsworth, London, on 15 September 1947, in her eightieth year. She had no children. A crater on the Moon is named after her and her husband.

**Patrick Devlin**